

Autonomous Robots

Chairs: Hajime Asama, Maria Gini

World Modeling and Behavior Generation for Autonomous Ground Vehicles

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- Design of a course vehicle motion planner for UGV's over rough terrain
- A description of our world model is presented
- A description of our behavior generator is presented
- Real vehicle implementation results are presented



Design, Experiments and Motion Planning of a Spherical Rolling Robot

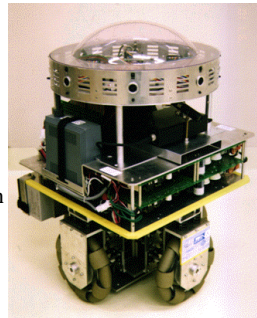
S. Bhattacharya and S. Agrawal
University of Delaware

A Motion Generation Approach for an Omnidirectional Vehicle

I. Paromtchik and H. Asama

The Institute of Physical and Chemical Research (RIKEN)

- Motivation and Objective
- The Mobile Robot and Its Control Architecture
- Proposed Motion Generation Approach
- Experimental Results



A localization method based on two omnidirectional perception systems cooperation

A. Clerentin, L. Delahoche, C. Pegard and E. Brassart
Institut Universitaire de Technologie - Amiens

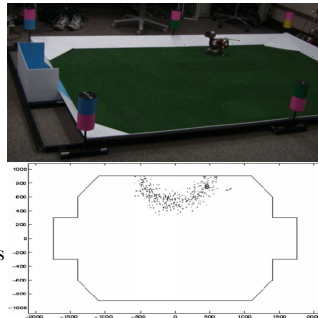
- An absolute localization paradigm is reported.
- It is based on the cooperation of two sensors :
 - - an omnidirectional vision system composed of a conical mirror and a CCD camera
 - - a low cost panoramic range finder system.



Sensor Resetting Localization for Poorly Modelled Mobile Robots

Scott Lenser and Manuela Veloso
Carnegie Mellon University

- Localization of poorly modelled, limited CPU robots is hard.
- Approach: add error detection and recovery to localization
- Results: quick, robust localization despite errors in model
- Error recovery increases robustness and decreases CPU cost.



Nonholonomic Motion Planning for Mobile Manipulators

Herbert Tanner and Kostas J. Kyriakopoulos
National Technical University of Athens

- Nonholonomic motion planning for mobile manipulators
- Discontinuous feedback law with potential fields
- Numerical simulations
- Real time implementation issues

